Researchers Report Clinical Association Between Type II PNH Cells and Thrombocytopenia

Study Presented at ASH Annual Meeting Highlights Importance of Identifying Type II PNH Cells and Using High Sensitivity Methods to Diagnosis PNH
Abstract 3015, Poster Board II-991

CHESHIRE, Conn., Dec 06, 2009 (BUSINESS WIRE) -- Alexion Pharmaceuticals, Inc. (Nasdaq: ALXN) today announced presentation of data showing that the presence of Type II paroxysmal nocturnal hemoglobinuria (PNH) cells is correlated with thrombocytopenia, potentially indicating that patients with Type II cells experience ongoing platelet consumption and increased thrombosis risk. The study also highlights the need to identify Type II PNH cells from both red and white blood cells when diagnosing the disease and continues to demonstrate the need for high sensitivity flow cytometry methods.

The data were presented today at the 51st Annual Meeting of the American Society of Hematology in New Orleans in a poster session titled, "Identification and Clinical Significance of Type II Granulocytes Among Patients with Paroxysmal Nocturnal Hemoglobinuria (PNH) Identified Using Multiparameter High-Sensitivity Flow Cytometry."

In the study, a large population of patients was tested for the presence of PNH clones using a high-sensitivity flow cytometry assay, which identified a notable population of PNH patients with detectable PNH granulocyte (Gran) clones. In the evaluation of granulocyte markers for Type II clones by high sensitivity flow cytometry, the FLAER reagent identified all Type II granulocyte PNH clones while antibodies to GPI-linked proteins demonstrated less sensitivity.

"Detection of Type II granulocyte PNH cells is clinically important, as specific identification of PNH red blood cell clones can be confounded by transfusion or hemolysis," said Mayur K. Movalia, M.D., Associate Pathologist for Dahl-Chase Diagnostic Services and lead author of the study. "Further, the observed association of thrombocytopenia and Type II cells, without detectable differences in other peripheral blood cells or parameters, suggests that the presence of Type II cells may be an additional marker for increased thrombotic risk in patients with PNH."

Thrombosis has been observed in PNH patients regardless of the level of hemolysis. Life-threatening thromboembolism is the most serious complication of PNH and accounts for 40 to 67 percent of patient deaths. (1)

"We appreciate the clinical importance of these study results showing a correlation between the presence of type II PNH cells and thrombocytopenia in patients with PNH," said Stephen Squinto, Ph.D., Executive Vice President and Head of Research and Development at Alexion. "These data help advance our understanding of PNH and highlight the importance of using high sensitivity methods as well as evaluating Type II PNH cells in the diagnostic evaluation of potential PNH patients."

Clinical Data

Researchers evaluated 2,921 consecutive patient blood samples submitted for PNH diagnostic testing to distinguish Type I, II and III granulocyte (Gran) clones. The samples were evaluated with a high-sensitivity flow cytometry assay for granulocytes including the FLAER reagent and complement inhibitor and lineage-specific antibodies. (2)

Following evaluation, 216 patient samples had a detectable PNH Gran clone, of which, clinical information was available for 162 of these patients. Of these samples, 19 patients demonstrated a distinct Type II Gran population (median Type II clone size = 7 percent). In 21 percent of the population, this Type II Gran clone represented >50 percent of the total (Type II + Type III) PNH cells.

Importantly, the presence of type II PNH granulocytes was associated with a significant increase in the incidence of thrombocytopenia. Patients with Type II Gran clones more commonly demonstrated platelet counts below 100,000 (68% vs. 44%, P=0.05) and showed significantly lower median platelet counts than patients without Type II Gran clones (54 $x10^9$/L vs. $116x10^9$/L; p=0.01). Patients with Type II Gran clones had similar peripheral white blood cell, red blood cell, and absolute neutrophil counts, as well as hemoglobin level (Hgb) compared to patients without Type II Gran clones, suggesting that differences in platelet counts are likely not due to differences in underlying marrow blood cell production, but rather to enhanced platelet consumption in patients with Type II Gran clones. These data suggest that the presence of Type II cells may be an additional marker for increased thrombotic risk in patients with PNH.

About PNH

PNH is an ultra-rare blood disorder that strikes people of all ages, with an average age of onset in the early 30s. (3) Patients with PNH suffer from hemolysis (red blood cell destruction) which leads to thromboses (blood clots), disabling fatigue, anemia, impaired quality of life, pulmonary hypertension, shortness of breath, recurrent pain, kidney disease and intermittent episodes of dark-colored urine (hemoglobinuria). (4,5) Approximately 10 percent of all patients first develop symptoms at 21 years of age or younger. (4) PNH develops without warning and can occur in men and women of all races, backgrounds and ages. PNH often goes unrecognized, with delays in diagnosis ranging from one to more than 10 years. (1) It is estimated that approximately one-third of patients with PNH do not survive more than five years from the time of diagnosis. (1) Studies have shown that kidney disease accounts for 18 percent of deaths among Japanese patients with PNH. (6) PNH has been identified more commonly among patients with disorders of the bone marrow, including aplastic anemia (AA) and myelodysplastic syndromes (MDS). (7,8,9) In patients with thrombosis of unknown origin, PNH may be an underlying cause. (4) More information on PNH is available at www.pnhsource.com.

About Alexion

Alexion Pharmaceuticals, Inc. is a biopharmaceutical company working to develop and deliver life-changing drug therapies for patients with serious and life-threatening medical conditions. Alexion is engaged in the discovery, development and commercialization of therapeutic products aimed at treating patients with a wide array of severe disease states, including hematologic and kidney diseases, transplant, cancer, and autoimmune disorders. Soliris is Alexion's first marketed product. Alexion is evaluating other potential indications for Soliris as well as other formulations of eculizumab for additional clinical indications, and is pursuing development of other antibody product candidates in early stages of development. This press release and further information about Alexion Pharmaceuticals, Inc. can be found at: www.alexionpharma.com.

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Safe Harbor Statement

This news release contains forward-looking statements, including statements related to potential health and medical benefits from Soliris (eculizumab). Forward-looking statements are subject to factors that may cause Alexion's results and plans to differ from those expected, including for example, decisions of regulatory authorities regarding marketing approval or material limitations on the marketing of Soliris, delays in arranging satisfactory manufacturing capability and establishing commercial infrastructure, delays in developing or adverse changes in commercial relationships, the possibility that results of published reports or clinical trials are not predictive of safety and efficacy results of Soliris in broader patient populations, the risk that clinical trials may not be completed successfully, the possibility that initial results of commercialization are not predictive of future rates of adoption of Soliris, the risk that third parties won't agree to license any necessary intellectual property to Alexion on reasonable terms or at all, the risk that third party payors will not reimburse for the use of Soliris at acceptable rates or at all, and a variety of other risks set forth from time to time in Alexion's filings with the Securities and Exchange Commission, including but not limited to the risks discussed in Alexion's Quarterly Report on Form 10-Q for the period ended September 30, 2009, and in Alexion's other filings with the Securities and Exchange Commission. Alexion does not intend to update any of these forward-looking statements to reflect events or circumstances after the date hereof, except when a duty arises under law.

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